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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,089	12/14/2005	Tomi Veikonheimo	034382-004	9066
21839 7590 03/19/2007 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER VENNE, DANIEL V	
			ART UNIT	PAPER NUMBER
			3617	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/19/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/539,089	VEIKONHEIMO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Daniel V. Venne	3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 3 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                        |                                                                                   |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)                           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application                 |
| Paper No(s)/Mail Date <u>2/8/2006</u> .                                                | 6) <input checked="" type="checkbox"/> Other: <u>Copies of Foreign References</u> |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because the layout of the specification does not follow the following guidelines, which illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

2. The disclosure is objected to because inconsistent terminology is used throughout the specification to describe the same features. One example is "flow plates" and "plates". Appropriate correction is required.

***Claim Objections***

3. Claims 3 and 9 are objected to because of the following informalities:
  4. On line 2 of claim 3, "have diameter" should be replaced with -- has a diameter --.
  5. On line 2 of claim 9, "the vessel" should be replaced with -- a vessel --.
- Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. Claim 6 recites the limitation "the tip edges" in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-7, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Winefordner et al. (US 6280284). Winefordner et al. shows all of the claimed features, including aft and forward propellers [24] installed on rotatable thrusters [22, 42] arranged on the essentially same axial line, whereby the aft and forward propellers have

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opposite directions of rotating and are arranged against each other with hubs and caps (ends of parts 40, 20] and at least two equally distributed flow plates (ridges) [56] arranged on the cap of the forward propeller and radially projecting from the forward propeller cap, as generally claimed. The caps and hubs of the thrusters [22, 42] are integral with each other, as well as the flow plates [56] with the forward hub and cap.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Varis (WO 0154971 A1), in view of Ogura (EP 0255136 A1). Varis teaches all of the claimed features, with the exception of at least two equally distributed flow plates arranged on the cap of the forward propeller radially projecting from the cap. Ogura teaches a propeller hub (boss) cap [5] with flow plates (fins) [6] for enhancing propeller performance characteristics and efficiency. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to modify to provide a propeller cap with flow plates as taught by Ogura for the forward propeller hub of Varis to create the invention as claimed by applicant. The motivation would have been to increase the performance and efficiency of the counter rotating propulsion system.

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13. Claims 1-11 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Varis (WO 0154971 A1), in view of Parsons (NO 10907). Varis teaches all of the claimed features, with the exception of at least two equally distributed flow plates arranged on the cap of the forward propeller radially projecting from the cap. Parsons teaches a propeller hub (boss) cap (cone) (Figs. 3-4) with flow plates (blades or vanes) [v] to help reduce cavitation effects. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to modify to provide a propeller cap with flow plates as taught by Parsons for the forward propeller hub of Varis to create the invention as claimed by applicant. The motivation would have been to reduce or minimize cavitation effects.

14. Claims 1-11 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Varis (WO 0154971 A1), in view of Akimoff (SE 61072). Varis teaches all of the claimed features, with the exception of at least two equally distributed flow plates arranged on the cap of the forward propeller radially projecting from the cap. Akimoff teaches a propeller hub cap [13] (Figs. 3-4) with flow plates [17] to enhance flow characteristics. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to modify to provide a propeller cap with flow plates as taught by Akimoff for the forward propeller hub of Varis to create the invention as claimed by applicant. The motivation would have been to enhance flow characteristics for the counter rotating propulsion system.

**Conclusion**

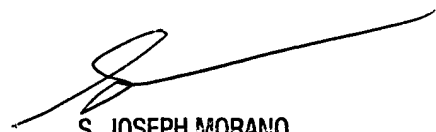
15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Levander (US 20040198108 A1) discloses a counter rotating propulsion system and Korhonen et al. (US 20060246793 A1) shows a counter rotating propulsion system with some of the same features as those claimed by applicant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel V. Venne whose telephone number is (571) 272-7947. The examiner can normally be reached between 7:30AM - 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samuel J. Morano can be reached on (571) 272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
DVV

7 March 2007

  
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